

The Importance of Mindfulness in Explaining the Relationship Between Adolescents' Anxiety and Dropout Intentions

Abstract

Failure to complete high school is associated with a myriad of negative outcomes. Some research has suggested a link between student anxiety and risk of dropout. Recently, there has been increasing evidence that mindfulness may diminish anxiety in adolescents; however, the relationship between anxiety, mindfulness and dropout has yet to be investigated. Thus, the current study examined the role of mindfulness and anxiety in adolescents' intentions for dropping out of school. The sample consisted of 471 Grade 9 students (53.1 % female; $M_{\text{age}} = 14.45$ years, $SD = .527$). All participants completed the Beck Anxiety Inventory for Youth, the Child and Adolescent Mindfulness Measure and an English translation of Le questionnaire de dépistage des élèves à risque de décrochage scolaire (questionnaire for screening of students at risk of school dropout) in groups. Results showed that anxiety demonstrated a moderate significant negative association with mindfulness, and a low significant positive association with reports of dropout intention. A significant low negative correlation was also found for mindfulness and dropout intention. Interestingly, mindfulness was found to partially mediate the relationship between anxiety and dropout intention, with a medium effect. Implications for future research and practice regarding mindfulness as a protective factor for dropout intention are discussed.

Introduction

Approximately 1.3 million students drop out of high school each year (American Psychological Association, 2012; Cohen & Smerdon, 2009; Leventhal-Weiner & Wallace,

2011). Compared to high school graduates, individuals who have not completed high school are more likely to experience significant personal and social repercussions such as unemployment, poverty, lower wages and increased risk of developing health and behavior problems (Fortin, Marcotte, Diallo, Potvin, & Royer, 2013; Martin, Robin, & Sugai, 2003; Vitaro, Brendgen, Larose, & Tremblay, 2005; Wilson & Tanner-Smith, 2013). There are a number of factors related to students' decision to drop out of high school including low academic achievement, lack of motivation, lack of interest, and family and behavior problems (Battin-Pearson et al., 2000; Fortin et al., 2013; Hickman, Bartholomew, Mathwig, & Heinrich, 2008). Some research has suggested that psychiatric disorders, which include anxiety disorders (e.g., agoraphobia, panic disorder, social phobia, as well as generalized anxiety disorders), mood disorders, substance use and conduct disorder, are important determinants of high school students' educational attainment and dropout (e.g., Kessler, Foster, Saunders, & Stang, 1995; Porche, Fortuna, Lin, & Allegria, 2011). In addition to anxiety disorders, reports of generalized anxiety symptoms (e.g., fearfulness, worries) have also been found to be predictive of failure to complete high school (Duchesne, Vitaro, Larose, & Tremblay, 2008).

Experiences of anxiety can be either state or trait related. State anxiety occurs when an individual develops a temporary perception of feelings of worry, nervousness or tension; these feelings tend to change over time and develop in response to stressful situations (e.g., testing situations; Spielberger, 1973). Trait anxiety represents individual stable feelings that contribute to the general tendency to experience anxiety states (Spielberger, 1973). State or trait anxiety varies from one individual to another; however, these experiences can affect almost all individuals, unlike clinical anxiety, which is a more frequent and persistent trait than the typical response to stressful situations (Lader & Marks, 1971). It has been reported that 10–20 % of

youth indicate that they are experiencing clinical levels of anxiety (e.g., Achenbach Howell, MConaughy, & Stanger, 1995; Gurley, Cohen, Pine, & Brook, 1996; Shaffer et al., 1996). In a more recent study examining lifetime prevalence of mental disorders in adolescents, anxiety disorders were found to be the most common mental disorder, with approximately one-third of adolescents who met the criteria for this disorder (Merikangas et al., 2010).

Research examining the role of anxiety traits on risk of dropout is limited; however, researchers argue that anxiety should be considered a critical determinant of students' decisions to drop out of high school. In a large longitudinal study, Kessler et al. (1995) examined the role of psychiatric diagnoses (e.g., anxiety disorders, mood disorders, substance use disorders, conduct disorder) in risk of high school dropout in individuals aged 15–54. Results revealed that 14.2 % of individuals with psychiatric disorders dropped out of high school, with anxiety as the most common contributing disorder among females (Kessler et al., 1995).

Similarly, in a 15-year longitudinal study including 1817 children (51 % female), researchers examined whether trajectories of anxiety during elementary school predicted high school dropout (Duchesne et al., 2008). Results from the parent version of the Preschool Behavior Questionnaire (which includes items related to the general emergence of emotional problems) revealed that students with high or chronic anxiety from kindergarten to Grade 6, as reported by mothers, had an increased likelihood of risk of high school dropout, compared to students with low or moderate anxiety.

Van Ameringen, Mancini, and Farvolden's findings (2003) also demonstrated the impact of anxiety on school dropout in a sample of 201 patients (67 % female) with a primary anxiety disorder based on DSM-IV criteria. Results from a brief school questionnaire designed to assess

the impact of anxiety disorders on school achievement and decision to drop out revealed that youth with anxiety disorders appeared to be at risk of leaving school early. Specifically, of the 98 participants who indicated that they had left school early, 24 % specified that their anxiety disorder was the main factor that influenced this decision to drop out. In light of these preliminary findings on the effects of anxiety on high school dropout, and the negative consequences of dropout (Caraway, Tucker, Reinke, & Hall, 2003), it is important to identify potential protective factors to mitigate the effect of anxiety on adolescents' dropout intentions.

Recently, there has been a substantial increase in interventions that use mindfulness strategies to help students manage both their state and trait anxiety. Mindfulness has been described as a nonjudgmental deep awareness and attention on the present moment (Kabat-Zinn, 2003) and can be assessed as a state or an individual trait/disposition. Specifically, in intervention research, mindfulness has been assessed pre-post intervention in order to demonstrate that states of mindfulness can increase following the intervention (Burke, 2010); however, in addition to experiencing a state of mindfulness in response to an intervention, it has been suggested that individuals may differ in their natural tendency to be mindful (Brown & Ryan, 2003). Dispositional mindfulness has been described as the general experiencing of mindfulness day-to-day and variations in dispositional mindfulness may develop naturally or may be enriched through mindfulness practice. According to the literature, the mechanisms by which mindfulness operate require further clarification and are “not well understood scientifically” (Kiken, Garland, Bluth, Palsson, & Gaylord, 2015); however, experiences of state mindfulness, which often occur in response to an intervention, have been associated with increases in dispositional mindfulness over time, and this dispositional mindfulness can

contribute to psychological well-being associated with mindfulness interventions (Kiken et al., 2015; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008).

In a recent meta-analysis on the effectiveness of mindfulness-based therapies, Khoury et al. (2013) discovered that mindfulness has been found to be a particularly effective treatment for decreasing stress and anxiety for individuals of diverse ages. More specifically, research has begun to provide evidence for the effectiveness of mindfulness-based activities in schools (Zenner, Herrnleben-Kurz, & Walach, 2014), particularly for reducing anxiety for children and adolescents (e.g., Beauchemin, Hutchins, & Patterson, 2008; Burke, 2010; Napoli, Kroch, & Holley, 2005; Semple, Reid, & Miller, 2005). The most frequent and prominent mindfulness-based approaches that have been associated with reduced anxiety include 5-10 week mindfulness programs (Burke, 2010). For instance, Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) consist of 8-week group interventions, which focus on the enhancement of mindfulness skills through consistent mindfulness meditation exercises and rehearsal (Burke, 2010).

In one study, Biegel, Brown, Shapiro, and Schubert (2009) examined the effect of MBSR within a sample of 102 inpatient adolescents (74 % female) with an array of diagnoses including anxiety and depression. Results showed that participants who received MBSR in addition to their usual treatment reported significantly reduced anxiety, depression and somatic distress, as well as increased self-esteem and sleep quality compared to a control sample that did not receive MBSR, with medium to large effect sizes at follow-up. Although this study provides support for the effectiveness of mindfulness programs in anxiety reduction in an adolescent population, it does not consider the effect of mindfulness-based practices within the school setting.

According to Zenner et al. (2014), mindfulness-based interventions have become increasingly popular in the school setting and have been found to be promising interventions for youth, despite the need for larger studies with active control groups and well-validated measures. For instance, Beauchemin et al. (2008) assessed the effect of a 5-week mindfulness meditation intervention on anxiety, social skills and academic performance in 34 adolescents (29 % female) with learning disabilities within secondary school classrooms. Using the State-Trait Anxiety Inventory, the results showed participants' state and trait anxiety scores decreased significantly with moderate effect sizes between pre- and post-mindfulness intervention. In addition to longer-term multiple week mindfulness programs, research has also examined the benefits of brief mindfulness-based classroom interventions for anxiety associated with test taking.

Test anxiety is experienced by approximately one-third of elementary and high school students and has been found to be associated with grade retention and dropout (Lowe & Lee, 2008). Carsley, Heath and Fajnerova's research (2015) was the first study to assess the effectiveness of a mindfulness-based art activity on test anxiety reduction in a sample of 52 children in Grades 4–6 (53.8 % female). Participants completed the State-Trait Anxiety Inventory for Children State form before and after the art activity, immediately before a spelling test. Results revealed a significant decrease in children's self-reported anxiety following the mindfulness art intervention. Although the effect size for this difference was small, this research provides preliminary evidence for the effectiveness of a mindfulness activity for test anxiety reduction.

The studies reviewed above demonstrate that mindfulness-based interventions are beneficial for anxiety reduction; however, given that research has suggested that increases of

state mindfulness are associated with greater dispositional mindfulness (Kiken et al., 2015), it is important to specifically examine the relation between anxiety and dispositional mindfulness.

Although there is limited research on dispositional mindfulness in adolescence, there has been preliminary evidence that dispositional mindfulness is associated with lower reports of social anxiety in adolescents (Rasmussen & Pidgeon, 2011), and lower levels of anxiety in adults (Brown & Ryan, 2003). Shapiro et al. (2011) assessed the benefits of dispositional mindfulness within a sample of 30 undergraduate students (86.7 % female). Individuals were randomly assigned to either an MBSR group or control group. Results from the Mindful Attention Awareness Scale revealed that dispositional mindfulness significantly moderated the effect of MBSR; specifically, individuals with higher dispositional mindfulness benefitted more in terms of mental health outcomes (e.g., decreased perceived stress, increased empathy, increases in mindfulness) with large effect sizes, compared to participants with low pre-treatment mindfulness. According to the authors, the success of MBSR does not specifically depend on high baseline or dispositional mindfulness; however, higher dispositional mindfulness appeared to enhance the magnitude of the success of MBSR as indicated by the various outcomes (Shapiro et al., 2011).

The influence of dispositional mindfulness and MBSR has also been explored in relation to individuals' self-reports of anxiety. Vollestad et al. (2011) examined the effect of MBSR in 76 patients (67.1 % female) with anxiety disorders. Participants were randomly assigned to an MBSR treatment group or a waiting-list control group. Results revealed that participants pre- to post-trait anxiety scores on the Beck Anxiety Inventory were partially mediated by their dispositional mindfulness compared to a waiting-list control group. Specifically, significant increases in dispositional mindfulness and indications of dispositional mindfulness' mediating

effect on anxiety were found in the participants who completed the MBSR intervention relative to the control condition. These results suggest that mindfulness interventions result in higher reports of dispositional mindfulness, which in turn is associated with decreases in self-reports of anxiety.

In summary, the existing research has demonstrated that both state and trait anxiety in adolescence can be reduced through the incorporation of mindfulness-based interventions (e.g., Beauchemin et al., 2008; Biegel et al., 2009). Furthermore, research has indicated that a relationship exists between dispositional mindfulness and the ability to experience mindfulness states (Shapiro et al., 2011), and this dispositional- and enhanced-state mindfulness both contribute to individuals' reductions in anxiety (Shapiro, Brown, & Biegel, 2007; Vollestad et al., 2011). Additionally, anxiety has been suggested as an important determinant of adolescent's risk of dropping out of high school (Poirier & Fortin, 2013; Van Ameringen et al., 2003); however, there is no evidence in examining the psychological attributes underlying the relation between anxiety and dropout.

In light of these findings, the current study sought to investigate the correlations between anxiety, dispositional mindfulness and intention to drop out in adolescents, and the predictive role of mindfulness in adolescents' anxiety and dropout intentions. It was hypothesized that anxiety would be significantly positively correlated with dropout and negatively with dispositional mindfulness. Next, it was hypothesized that dispositional mindfulness would be significantly negatively correlated with dropout. Finally, it was predicted that dispositional mindfulness would mediate the relationship between anxiety and the intention to drop out of high

school. Understanding the correlations and possible mediator role of mindfulness in this mediation model would have clear implications for school mental health services, specifically related to enhancing mindfulness in the schools to allow students to better cope with anxiety and protect against dropout.

Methods

Participants

The present study draws from a three-year longitudinal study examining stress and coping strategies in adolescents; specifically, during the final year of data collection, 546 Grade 9 students (53.5 % female; $M_{\text{age}} = 14.45$ years; $SD = .52$) were recruited from 17 secondary schools in Montreal, Quebec, Canada and were asked to complete a series of measures on mindfulness, anxiety, and intentions to dropout. Classification of schools was low socioeconomic status (SES) urban (10 %), middle SES suburban (40 %), and high SES independent (20 %). Due to time constraints, 75 students were unable to complete measures assessing their mindfulness and intentions to drop out and were therefore excluded in the final sample. Almost all of the students (99.2 %) completed the anxiety measure; therefore, a t test comparison of anxiety levels between included and excluded students was conducted. The result was non-significant suggesting there are no significant differences in reported anxiety between the included and the excluded students. Thus, a final sample for the present study included 471 Grade 9 students (53.1 % female; $M_{\text{age}} = 14.45$ years, $SD = .527$). Participants reported English (70.2 %) and French (4.9 %) as their primary language spoken at home. Many participants (23.2 %) indicated that French and English were both spoken at home. The majority reported Canada (95.9 %) as their country of birth, followed by United States (.9 %).

Materials

Beck Anxiety Inventory for Youth

The Beck Anxiety Inventory for Youth (BAI-Y) is a self-report measure assessing children's and adolescents' (i.e., individuals ranging from 7 to 18 years of age) fears, worries and physiological symptoms of anxiety (Beck, Beck, Jolly, & Steer, 2005). The measure contains 20 items pertaining to participants' worries concerning school and the future, negative reactions of others, fears, and general anxiety symptoms, and takes approximately 5–10 min to complete, either individually or in groups. Participants indicate how often each item is true for them on a 4-point scale (0 = *never*; 3 = *always*). Items include statements such as “I worry people might tease me” and “I think about scary things.” The BAI-Y is positively correlated with the physiological anxiety ($r = .46$), worry/oversensitivity ($r = .62$) and social concern/concentration ($r = .48$) subscales of the Revised Child Manifest Anxiety Scale in adolescents (Beck et al., 2005). Additionally, the authors report high internal consistency for the BAI-Y across a sample of female ($\alpha = .89$) and male adolescents ($\alpha = .91$) as well as a high test–retest correlation for a sample of female ($r = .88$) and male adolescents ($r = .80$). In the present sample, the BAI-Y was shown to have a Cronbach alpha of .93.

Child and Adolescent Mindfulness Measure

The Child and Adolescent Mindfulness Measure (CAMM) is a self-report measure of dispositional mindfulness (Greco, Baer, & Smith, 2011). This measure consists of 10 reverse-scored items about children's and adolescents' self-reports of mindfulness that focus on present moment awareness (e.g., “I think about things that happened in the past instead of thinking about things that are happening right now”) as well as non-judgmental acceptance (e.g., “I tell myself

that I shouldn't feel the way I'm feeling"). Participants indicate how often an item is true for them on a 5-point scale (0 = *never true*; 4 = *always true*). The CAMM has adequate internal consistency and divergent validity with measures of thought suppression and psychological inflexibility (Greco et al., 2011). In the present study, the CAMM was shown to have a Cronbach alpha of .89.

Questionnaire de Dépistage D'élèves à Risque de Décrochage Scolaire; Questionnaire for Screening of Students at Risk of School Dropout

High school students' intention to drop out of school was assessed using the English translation of the Questionnaire de dépistage d'élèves à risque de décrochage scolaire (DEMS; Potvin et al., 2004). This self-report measure contains 33 items with five subscales, and takes approximately 20 min to complete, and can be administered either individually or in groups. Subscales include parent engagement (e.g., "My parents help me when I do not understand something in my school work...completely agree/mostly agree/mostly disagree/completely disagree"), attitudes toward school (e.g., "For me, succeeding in school is...very important/important/somewhat important/not important"), perception of school achievement (e.g., "Which statement best represents you? I am able to succeed at anything I attempt at school/I am able to succeed at nearly anything I attempt at school/I sometimes think I cannot succeed at school/I often think I cannot succeed at school"), parent supervision (e.g., "My parents know exactly where I am at night...never/sometimes/often"), and educational aspirations (e.g., "How far do you intend to pursue your studies?"). Potvin et al. (2009) report that the DEMS was validated based on studies conducted with high school students (Potvin, Fortin, &

Rousseau, 2009) and was shown to have very good test–retest reliability. Furthermore, the authors state that in order to determine criterion validity, predictive validity was assessed; total scores precisely categorized students (80.3 %) into dropout versus non-dropout groups (Potvin et al., 2004). In the present sample, the DEMS was shown to have a Cronbach alpha of .88.

Procedure

Following school approval, Grade 7 students were presented with a description of the three-year research project, and the associated risks, benefits, goals, objectives, methodology and confidentiality agreements. Participants were informed that their completion of the measures made them eligible to win one of four \$50 gift cards for a local cinema, and if selected for follow-up interviews, they would receive a \$10 gift card for a local store or lunch spot. The students were notified that they were able to withdraw from the research project at any time without consequences. The researcher was available to answer any questions or concerns that the students may have had. All students were provided with a project information letter and an informed consent form for their parents. The students who returned signed consent forms (regardless of decision) received a small chocolate bar and were entered in a draw for one of two gift cards (valued at \$100 and \$200) to a local shopping mall.

Identical data collection occurred at three time points corresponding to the students' Grade 7th, 8th, and 9th years. The data collected for this particular study were taken from Time 3, when students were in 9th grade. Students whose parents had provided consent completed the measures in groups ranging from 30 to 60. Black cardboard dividers separated the students in order to ensure that the students had space and privacy. Participants were asked to provide assent

prior to beginning the questionnaires. The measures included the BAI-Y, the CAMM and the DEMS.

Data Analysis

In order to test the first and second hypotheses (i.e., anxiety would be significantly positively correlated with dropout and negatively correlated with dispositional mindfulness, and dispositional mindfulness would be significantly negatively correlated with dropout), a series of Pearson's Product Moment Correlations were calculated. With regard to the third hypothesis (i.e., dispositional mindfulness would mediate the relationship between anxiety and dropout), Hayes and Preacher's (2014) procedure to examine mediation was employed.

Results

Pearson's correlation coefficients (Table 1) displays the significant low positive association between anxiety and dropout intention ($.36; p < .001$); the significant moderate negative relationship between anxiety and dispositional mindfulness ($-.58; p < .001$); and the significant low negative correlation between dispositional mindfulness and dropout intention ($-.33; p < .001$), all of which provide support for the hypothesized pattern of relationships between these variables.

In order to test the hypothesis that dispositional mindfulness would mediate the relationship between self-reports of anxiety and dropout intention a mediation analysis was conducted. First, assumptions for regression were examined. No significant departure from normality and linearity was found. As noted earlier, Table 1 displays Pearson's correlation coefficients between the variables. Thus, using the Preacher and Hayes (2004) procedure, a mediation analysis was performed to assess the effect of dispositional mindfulness ($M = 27.13$;

$SD = 8.26$) in the relationship between anxiety ($M = 46.63$; $SD = 9.78$) and dropout intention ($M = 83.64$; $SD = 17.37$). This method employs bootstrapping rather than normal theory to test for mediation. As displayed in Fig. 1, the effect of anxiety on mindfulness is a significant negative effect (*path a*; $-.584$). Accordingly, higher levels of anxiety are associated with lower levels of mindfulness. Similarly, there is a significant negative effect of mindfulness on dropout intent (*path b*; $-.180$), with higher levels of mindfulness being associated with lower reports of dropout intent. Furthermore, when mindfulness is not mediating the relationship between anxiety and dropout, there is a significant positive effect between these two variables (*path c*; $.256$), such that higher levels of anxiety correspond to greater dropout intention. In addition, the indirect effect (*path c'*) of anxiety on dropout is $.105$. Since the 95 % CI $[.050, .166]$ does not include 0, there is evidence of the mediation of mindfulness in the relationship between anxiety and dropout. Therefore, these results suggest that mindfulness partially mediates the relationship between anxiety and dropout. With regard to the effect size, the Kappa-squared obtained was a medium effect of $.091$, 95 % $[.043-.143]$. Table 2 includes the regression weights, significance tests and confidence intervals for the variables in the mediation model.

Discussion

The purpose of the present study was to examine the relationship between anxiety, dispositional mindfulness and intentions for dropping out of school. In addition to the predicted simple correlations between anxiety, dropout and dispositional mindfulness, it was hypothesized that dispositional mindfulness would play an important role in explaining the relationship between anxiety and dropout. Anxiety has been suggested as an important determinant of dropout risk (e.g., Duchesne et al., 2008; Van Ameringen et al., 2003); however, research has not yet examined whether reports of mindfulness would further explain this relationship. Consistent

with previous literature, results of this study revealed a significant positive association between reports of anxiety and dropout and a negative association between anxiety and dispositional mindfulness. The current findings extend previous research by indicating that dispositional mindfulness is significantly negatively related with dropout intentions. Furthermore, the findings partly support the hypothesis that adolescents' reports of dispositional mindfulness would mediate the relationship between reports of anxiety and intentions to drop out of school. A number of possible explanations might account for these findings.

The present study identified a positive relationship between adolescents' reports of anxiety and dropout intention suggesting that high anxiety is associated with increased risk of dropout. Although the magnitude of the correlation coefficient is small, this finding further confirms the results of previous studies (e.g., Duchesne et al., 2008; Van Ameringen et al., 2003). As children and adolescents progress through school, their risk of developing anxiety increases (Grant, 2013). In high school, adolescents may experience worries regarding their academic performance, peer groups, and fear of failure. As a result of these worries, it is possible that adolescents may be more inclined to drop out of school early in order to avoid the stress they are encountering in high school. Given this finding, it is important to determine factors to support anxious students to decrease risk of dropout.

Consistent with previous literature, the present study also found that anxiety is negatively and moderately related with mindfulness (e.g., Beauchemin et al., 2008; Biegel et al., 2009; Shapiro, Brown, & Biegel, 2007; Vollestad et al., 2011). Specifically, adolescents who reported lower levels of anxiety were also reporting greater dispositional mindfulness. According to Brown and Ryan (2003), mindfulness can help predict individuals' positive emotional states and ability to regulate their behaviors; therefore, these findings may suggest that adolescents who are

generally mindful may be less likely to experience anxiety because they do not demonstrate excessive worry about future school challenges compared to adolescents who are not mindful.

The finding that mindfulness was negatively related to dropout may be a result of an association between mindfulness and well-being in the face of stress. Being mindful may enhance an adolescent's ability to maintain a sense of well-being even when faced with the significant stressors of high school and thus less likely to express a desire to dropout. Research has shown that mindfulness is associated with psychological well-being for cancer patients and chronic pain sufferers in adults and adolescents (e.g., Garland, Tamagawa, Todd, Speca, & Carlson, 2013; Petter, Chambers, McGrath, & Dick, 2013); however, the exact nature of the experiencing of mindfulness by adolescents in the school setting requires further investigation.

In order to understand the relation between anxiety and dropout, it is important to consider that this association is affected by mindfulness. Interestingly, in this first examination of the importance of mindfulness in understanding the effects of anxiety in dropout risk, the partial mediation demonstrates that the relationship between anxiety and dropout is strengthened by mindfulness. A key component of mindfulness is the ability to maintain a focused awareness and acceptance of thoughts and feelings in the present moment (Kabat-Zinn, 2003). As such, youth with mindfulness may be aware of the anxiety that they are experiencing but accept it, resulting in the anxiety being less stressful or aversive for them. It is likely that adolescents reporting high levels of mindfulness on the CAMM, (which asks about awareness and acceptance of feelings) are not struggling with anxiety compared to adolescents reporting less mindfulness; thus, this

finding may suggest that adolescents who are more accepting of their anxiety may be less likely to avoid situations that are anxiety-provoking, such as the challenges of school.

In addition to reduced anxiety, mindfulness is also associated with self-efficacy, positive states of mind (e.g., focused attention, productivity, etc.), self-esteem, enhanced social skills, academic performance, and increased persistence (Beauchemin et al., 2008; Biegel et al., 2009; Chang et al., 2004; Evans, Baer, & Segerstrom, 2009; Roeser et al., 2013). The finding that dispositional mindfulness mediates the relationship between anxiety and dropout intention may also be due to adolescents' ability to persevere despite the anxiety, which would decrease the likelihood of dropout intentions. Due to the finding that anxiety affects dropout through dispositional mindfulness, being mindful may enable individuals to be more present and aware of what they are experiencing, and persist in other domains and tolerate the struggle associated with anxiety.

Despite the interesting findings of the current study, the present investigation had a number of limitations. First, with regard to the measurement of "intention to drop out," though found to be significantly predictive of actual dropout (Potvin et al., 2004), it is not actual dropout. Ideally, a longitudinal study examining the relationship of mindfulness and anxiety to both intent and actual dropout would be beneficial. A second limitation relates to the construct of mindfulness. Although the CAMM is considered to be a strong measure of mindfulness, the field of mindfulness continues to struggle with how to effectively measure the construct. Specifically, the CAMM has been shown to be a measure of dispositional mindfulness, which is critical for this particular research; however, future research would benefit with a more detailed examination of the construct as a process (Erisman & Roemer, 2012) in addition to an individual disposition and/or state. Finally, the BAI-Y was used in this study due to its brevity and feasibility with

adolescents in the school setting. It would be interesting for future research to include a more comprehensive state and trait measure of anxiety in order to address both state and trait anxiety in students.

Despite these limitations, these findings provide implications for school mental health. This study expands on the research related to dropout, anxiety, and mindfulness, and suggests that interventions in the area of mindfulness as it pertains to dropout should be examined in the future. This is the first study to assess the relationship between mindfulness and risk for dropout, and the direct effect of mindfulness as well as the mediating effect of mindfulness on anxiety and dropout intention. In light of previous research that demonstrates that reports of dispositional mindfulness increase following mindfulness interventions (e.g., Carmody & Baer, 2008; Shapiro et al., 2007), the potential benefits for youth in completing mindfulness interventions may extend to decreased dropout risk. This study suggests the need for follow-up studies on mindfulness interventions in the schools with a focus on increasing mindfulness, in addition to reducing anxiety. If students can learn to develop mindfulness dispositions, then perhaps their success in school can be enhanced, regardless of their trait anxiety. Furthermore, continued experience in mindfulness interventions can support students with trait anxiety in learning how to manage their general worries and stressors associated with school, which can lead to increased dropout risk. Given the preliminary findings of this theoretical research, future research is needed to investigate the effects of mindfulness interventions on increasing dispositional mindfulness, as well as reducing risk for dropout.

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Tables and Figures

Table 1 Correlation among the variables

Variable	2	3
Anxiety	-.584**	.361**
Mindfulness		-.329**
Dropout	—	
** p < .001		

Fig. 1 Conceptual graph of the mediating effect of mindfulness in the association between anxiety and school dropout intention

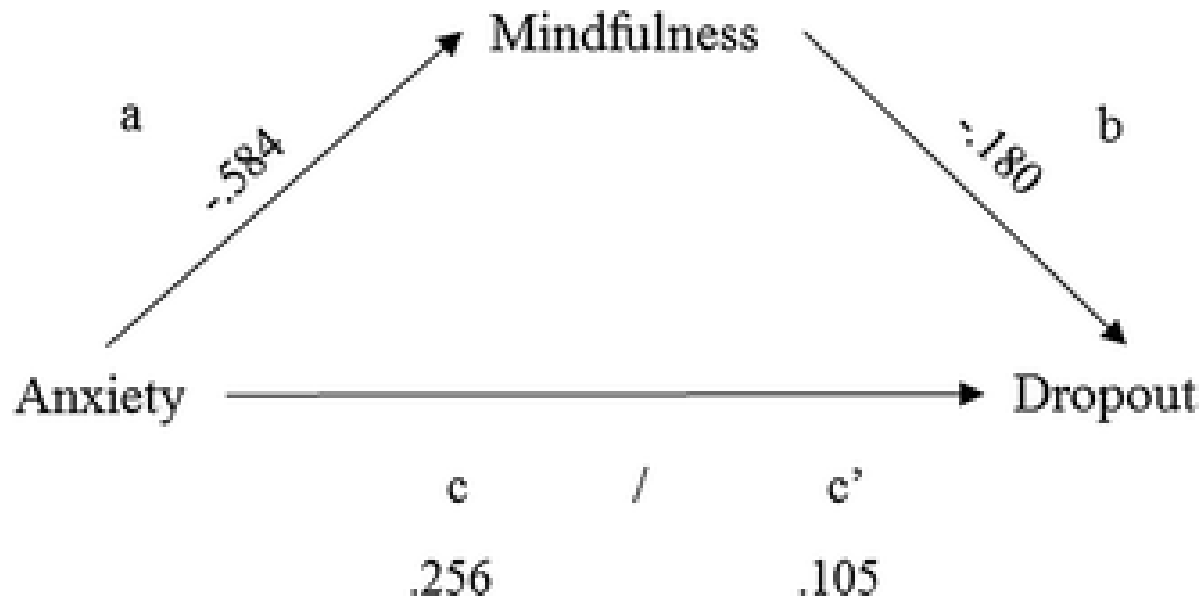


Table 2 Regression coefficients and significance tests

	B	SE	t	LL CI 95 %	UL CI 95 %
Outcome: mindfulness $R^2 = .341$, $F(1,469) = 242.87^{**}$					
Anxiety (path a)	-.584	.04	-15.58**	-.658	-.510
Outcome: dropout $R^2 = .152$, $F(2,468) = 41.86^{**}$					
Mindfulness (path b)	-.180	.053	-3.427**	-.283	-.077
Anxiety (path c)	.256	.053	4.885**	.153	.359
** $p < .005$					

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